



Keystone Spring and Metal Works.

K. W. Blackwell,

Manufacturer of

Spiral and Elliptic Springs

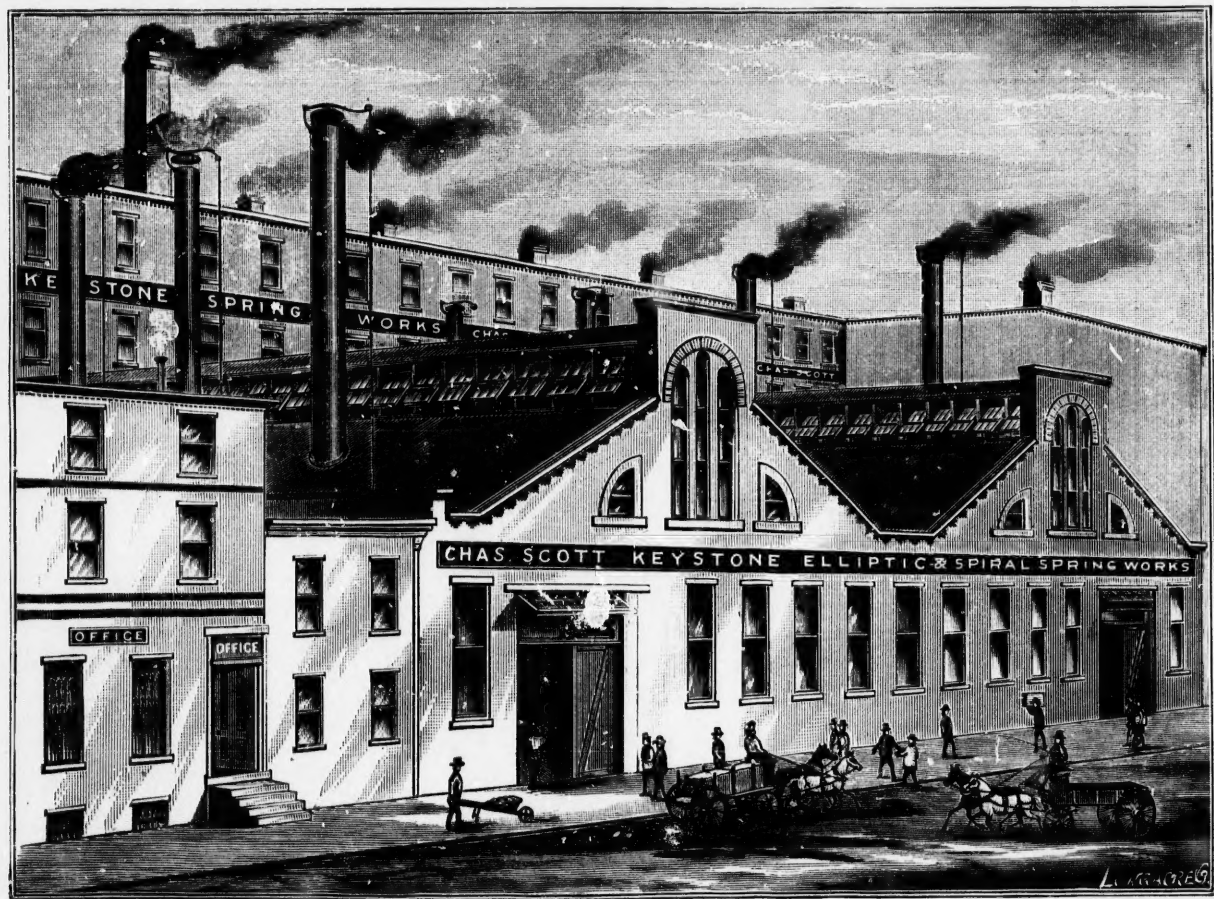
FOR RAILWAY CARS AND LOCOMOTIVES,

Corner Canal and Condé Streets,
MONTREAL.

K. W. Blackwell.

Special Partners, { Charles Scott.
Charles T. Schoen.

Sole Agents in the Dominion for Ajax
Metal Co., Philadelphia.





Montreal, September, 1883.

WE call your attention to our Catalogue of Elliptic and Spiral Springs.

We use the best grade of CRUCIBLE STEEL worked by the most approved methods and machinery, and by SKILLFUL WORKMEN.

We stand pledged to a high standard of excellence in the QUALITY of our product.

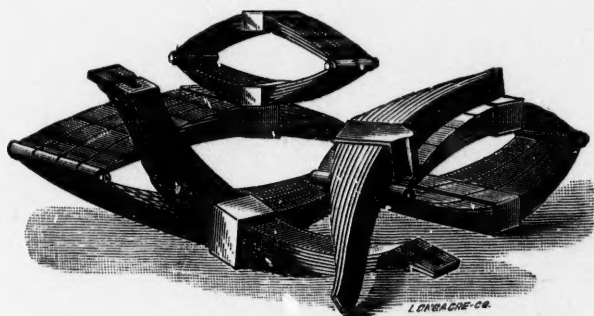
Each spring is thoroughly tested and inspected before leaving Works.

All Springs Warranted.

Car and Locomotive Springs.

Warranted.

Any shape, size or capacity made to order from drawings
or specifications.

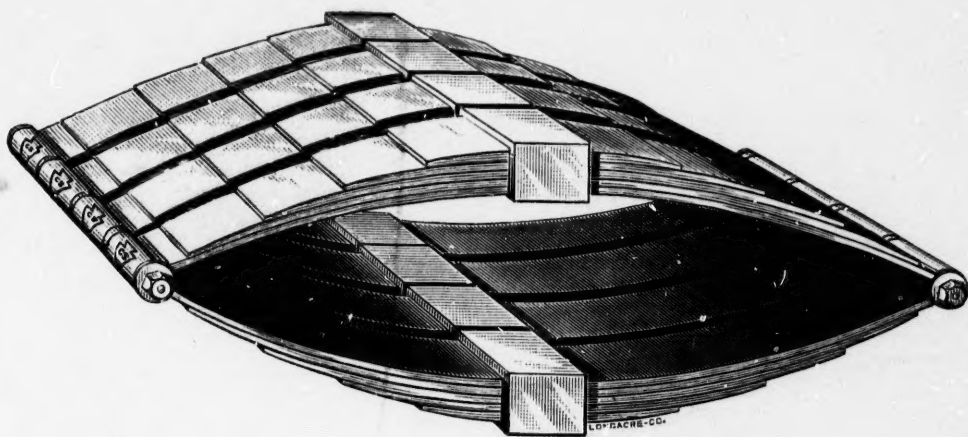


Passenger or Baggage Car Elliptic Springs.

DOUBLE, TRIPLE OR QUADRUPLER.

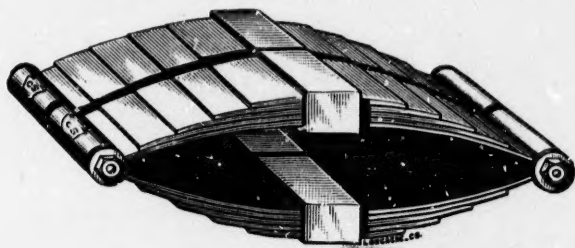
Made of any required length, height or capacity.

Auxiliary plates, or not, as desired.



Freight Car Elliptic Springs.

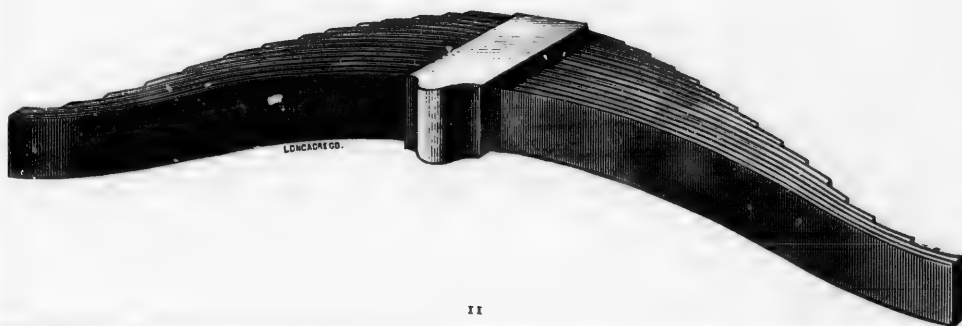
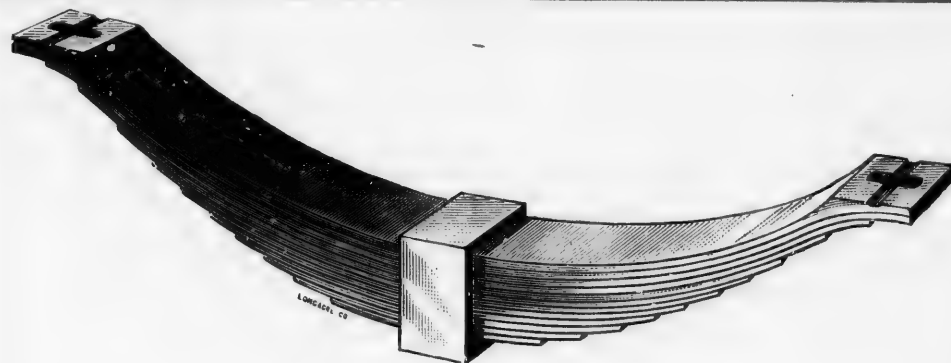
Made of any size or capacity required.



Locomotive Springs.

Warranted.

Made from drawings or specifications of any shape
or style.



Graduated Bolster Spring,

No. 17.

United States Patents: August 16, 1881; January 3 and March 21, 1882.

Canadian Patent: May 6, 1882.

Length, . . . 17 inches.
Width, . . . 8½ "
Height, . . . to meet specifications.
Capacity, . . . 40,000 lbs. each.

The motion of this spring is as SOFT UNDER AN EMPTY CAR as when loaded with fifteen to thirty tons.

It is the STRONGEST Bolster Spring made.

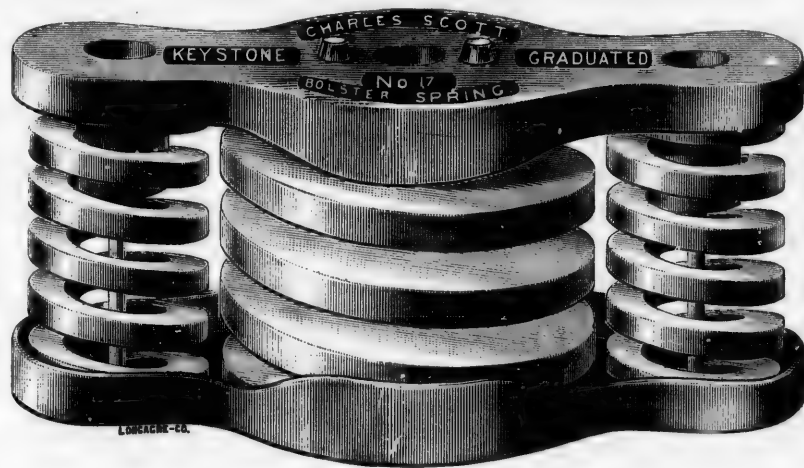
It has LESS THAN HALF the dead weight of Elliptics.

It is about ONE HALF THE PRICE of Elliptics.

The motion is guaranteed BETTER than Freight Elliptics.

It is now in use on all the leading railroads of the United States and Canada, to their ENTIRE satisfaction.

THE ONLY SPRING MADE THAT WILL CARRY AN EMPTY CAR AS EASILY AS WHEN FULLY LOADED.



Graduated Bolster Spring,

No. 17.

United States Patents : August 16, 1881; January 3 and March 21, 1882.

Canadian Patent : May 6, 1882.

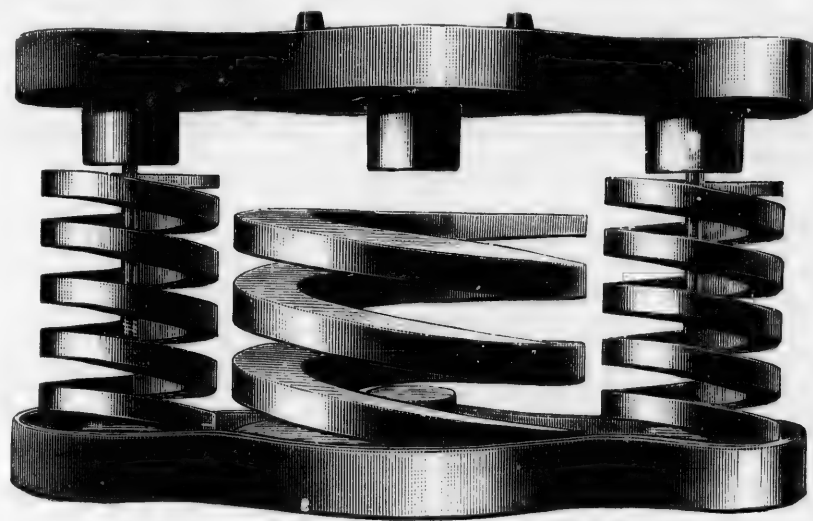
Length, . . . 17 inches.

Width, . . . 8½ "

Height, . . . to meet specifications.

Capacity, . . . 40,000 lbs. each.

Top plate removed, showing difference in length of coils.



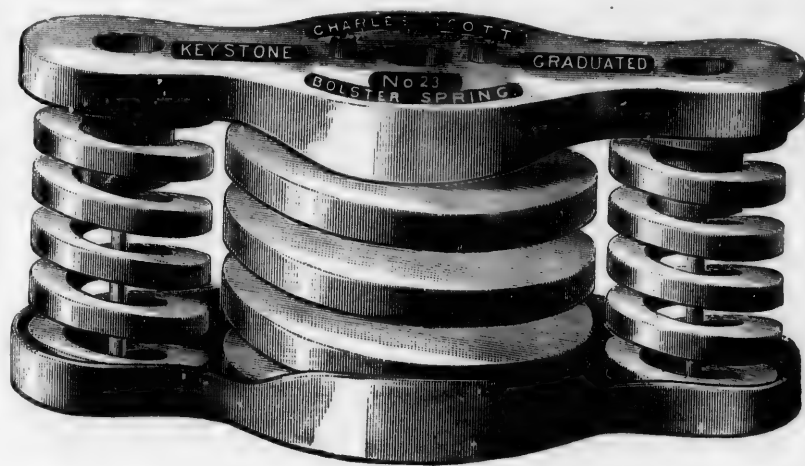
Graduated Bolster Spring,

No. 28.

MALLEABLE PLATES.

United States Patents: August 16, 1881; January 3 and March 21, 1882.
Canadian Patent: May 6, 1882.

Length,	.	17 inches.
Width,	.	8 "
Height,	.	as required.
Capacity,	.	40,000 lbs. each.



Graduated Bolster Spring,

No. 24.

MALLEABLE PLATES.

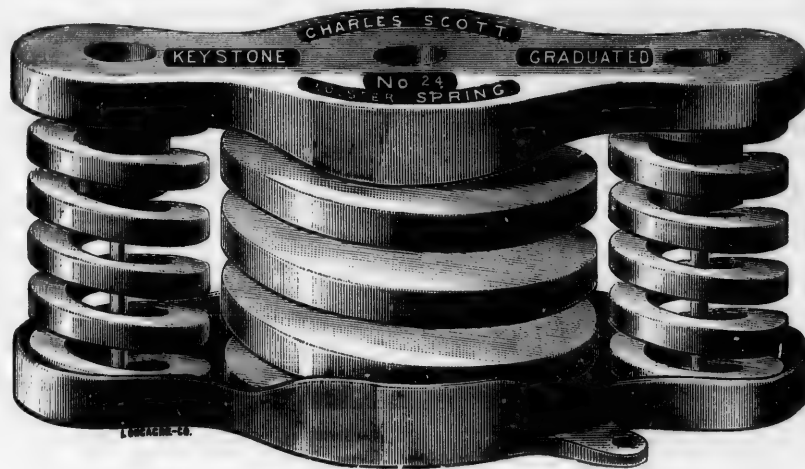
PENNSYLVANIA RAILROAD PATTERN.

United States Patents: August 16, 1881; January 3 and March 21, 1882.

Canadian Patent: May 6, 1882.

Length,	17 inches.
Width,	8 "
Height,	6 $\frac{1}{4}$ "
Capacity,	40,000 lbs. each.

This pattern with lugs on lower plate has been put in service on the Pennsylvania Railroad and roads operated by the Pennsylvania Company, for twenty-five ton cars.



Graduated Tender Spring,

No. 21.

United States Patents: August 16, 1881; January 3 and March 21, 1882.

Canadian Patent: May 6, 1882.

Length, . . . 20 inches.

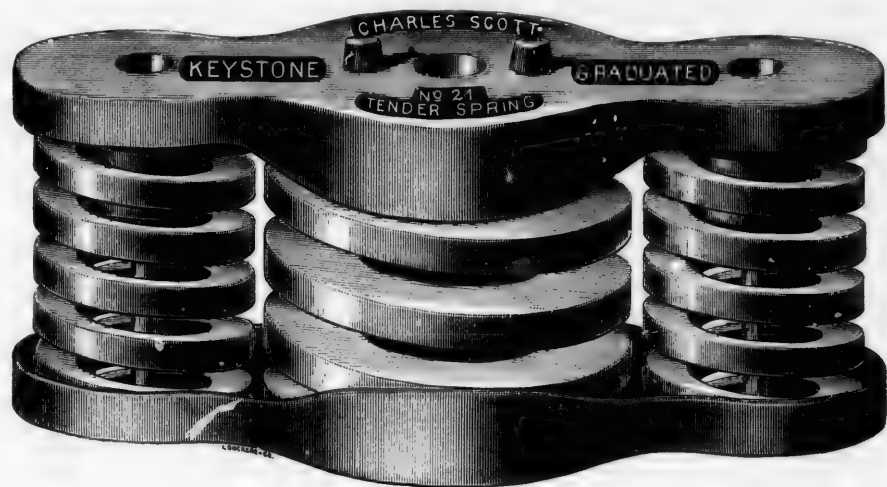
Width, . . . 9 inches.

Height, to meet specifications.

Capacity, . . . 50,000 lbs. each.

This is the **STRONGEST** and best spring made for the purpose.

Guaranteed to carry the varying loads of tenders with an easy motion under all circumstances.



Graduated Tender Spring,

No. 25.

MALLEABLE PLATES.

United States Patents: August 16, 1881; January 3 and March 21, 1882.

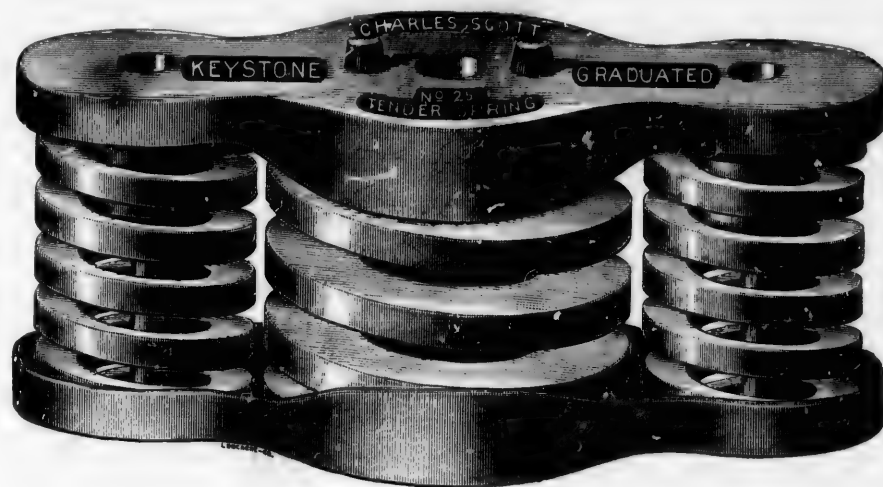
Canadian Patent: May 6, 1882.

Length, . . . 20 inches.

Width, . . . 8½ "

Height, . . . to meet specifications.

Capacity, . . . 50,000 lbs. each.



Graduated Tender Spring,

No. 28.

MALLEABLE PLATES.

PENNSYLVANIA RAILROAD PATTERN.

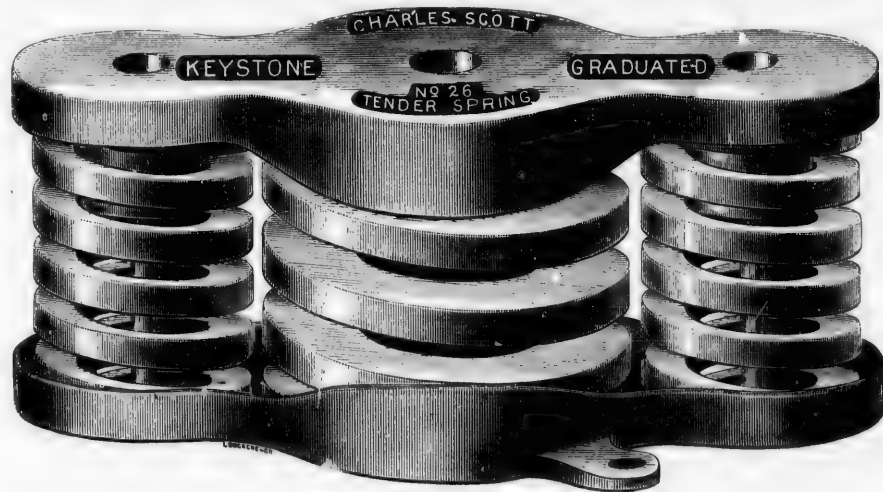
United States Patents : August 16, 1881 ; January 3 and March 21, 1882.
Canadian Patent : May 6, 1882.

Length, . . . 20 inches.

Width, . . . 8 1/2 "

Height, . . . to meet specifications.

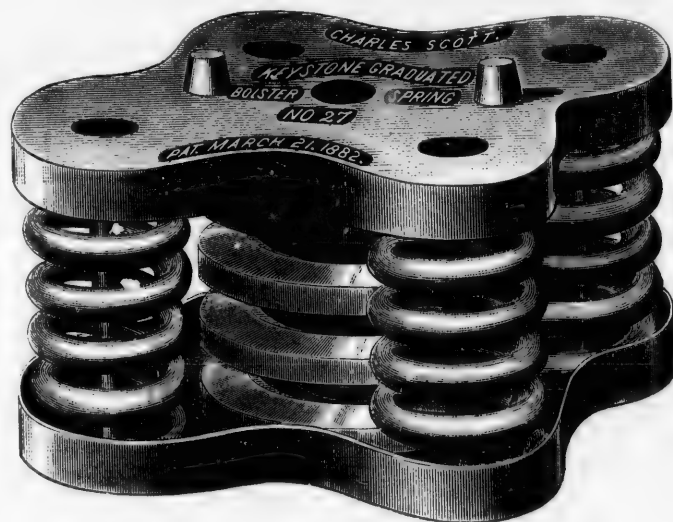
Capacity, . . . 50,000 lbs. each.



Graduated Bolster or Tender Springs, No. 27.

United States Patent : March 27, 1882. Canadian Patent : May 6, 1882.

Length,	12 inches.
Width,	10 inches.
Height,	as required.
Capacity,	to meet specifications from 10,000 to 40,000 lbs. each.



Single Coil Equalizing Spring.

PENNSYLVANIA RAILROAD STANDARD.

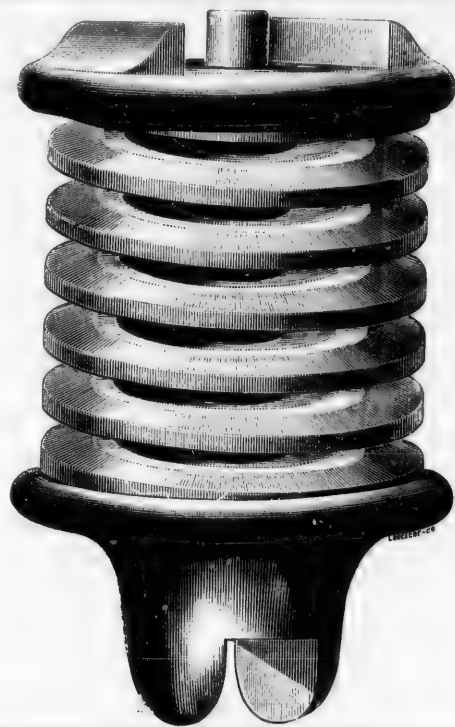
United States Patent : January 3, 1882.

Diameter, . . . 8 inches.
Height, . . . as required.
Capacity, . . . to suit weight of car.

Range of motion GREATER,

Quality of motion BETTER,

Than in any other Equalizing Spring made.



Single Coil Bolster Spring.

No. 18.

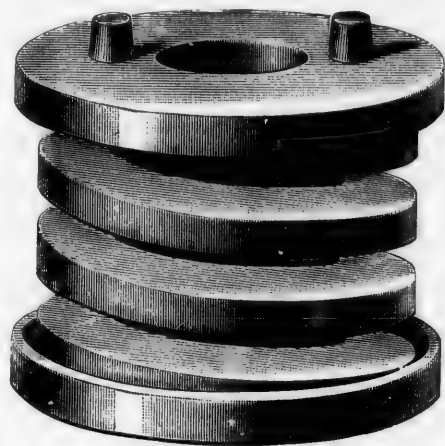
United States Patents : August 16, 1887, and January 3, 1882.

Diameter, . . . 9 inches.

Height, to meet specifications.

Capacity, . . 35,000 lbs. each.

Motion very soft and slow.



Two-Coil Bolster Spring,

No. 19.

MALLEABLE PLATES.

PENNSYLVANIA RAILROAD STANDARD.

United States Patents: August 16, 1881, and January 3, 1882.

Diameter, 8 inches.

Height, . as required.

Capacity, 35,000 lbs. each.

This spring in connection with Graduated, No. 24 (pages 18 and 19),
are now used almost exclusively on Pennsylvania
Railroad twenty and twenty-five ton cars.

Motion very soft and slow.



**Graduated Three-Coil Bolster Spring,
No. 22.**

United States Patent Re-issued February 27, 1877.

Diameter,	.	9 inches.
Height,	.	as required.
Capacity,	.	35,000 lbs. each.

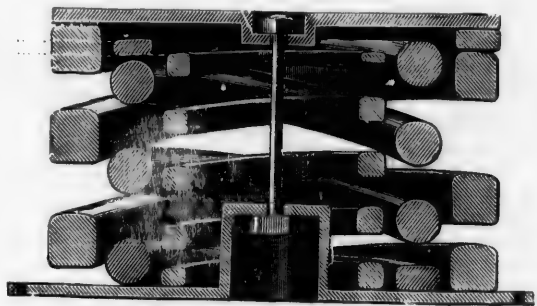


Graduated Three-Coil Bolster Spring,
No. 22.

United States Patent Re-issued February 27, 1877.

Diameter, . . . 9 inches.
Height, . . . as required.
Capacity, . . . 35,000 lbs. each.

Sectional view, showing difference in length of coils.

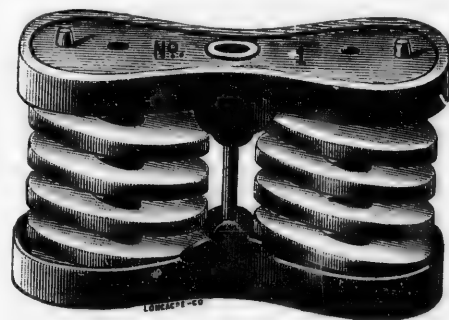


Narrow Gauge Bolster Spring, No. 1.

United States Patent August 16, 1881.

Length, . 11 $\frac{1}{4}$ inches.
Width, . 6 $\frac{1}{4}$ "
Height, to meet specifications.
Capacity, 12 to 15 tons load.

Two coils in a case.



Three-Coil Bolster Spring.

No. 2.

United States Patent August 16, 1881.

Length, 11 $\frac{1}{4}$ inches.
Width, 8 $\frac{3}{4}$ "
Height, to meet specifications.
Capacity, twenty tons load.

Three coils in a case.



Union Bolster Spring.

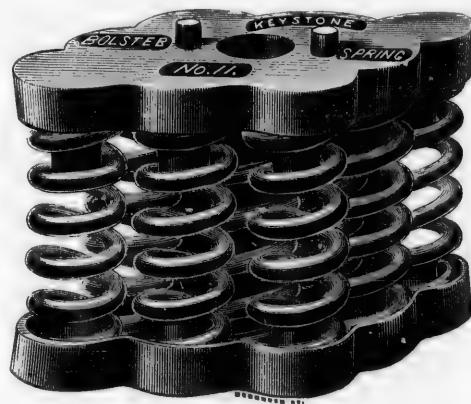
No. 11.

Diameter, . 10 $\frac{3}{4}$ inches.

Height, to meet specifications.

Capacity, . twenty tons load.

Composed of nine coils in a case.



Round Bar Spiral Bolster Spring.

Length, . . . $11\frac{1}{2}$ inches.

Width, . . . 9 "

Height, to meet specifications.

Capacity, twenty tons load.

Composed of three double coils in a case.



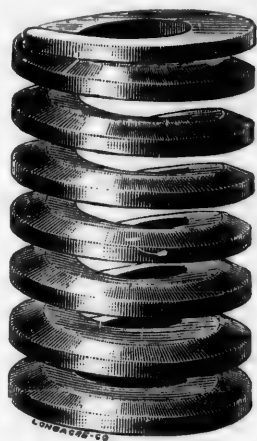
Single Coil Draw Springs.

Diameter, . 5 inches.

Height, . as required.

Capacity, 16,000 to 18,000 lbs.

Hole of any size, to suit draw-bar.



Two-Coil Draw Springs.

Diameter, . 5½ to 6 inches.

Height, . as required.

Capacity, 16,000 to 20,000 lbs.

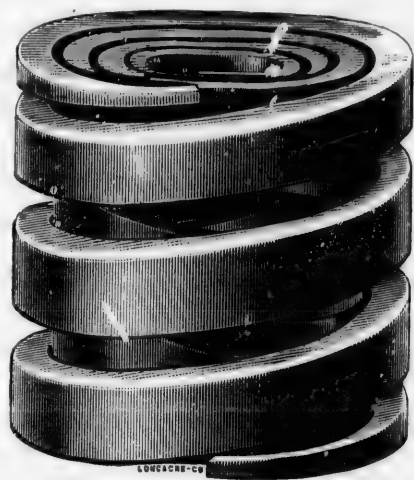
Hole of any size, to suit draw-bar.



Nest Spiral Spring.

Diameter, .	.	as required.
Height, .	.	" "
Capacity, .	.	" "

Made of any size or number of coils required.

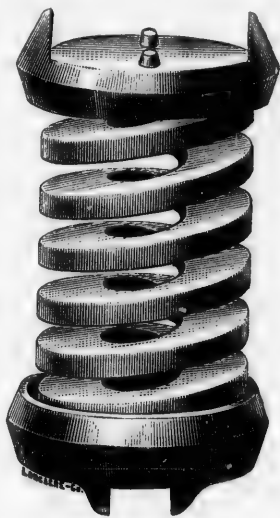


LOWEACRE-CO

Edge Rolled Equalizing Spring

For Narrow Gauge Cars.

Height,	as required.
Diameter,	" "
Capacity,	" "



Round Bar Equalizing Spring

For Narrow Gauge Cars.

Height,	.	as required.
Diameter,	.	" "
Capacity,	.	" "

Either one or two coils.



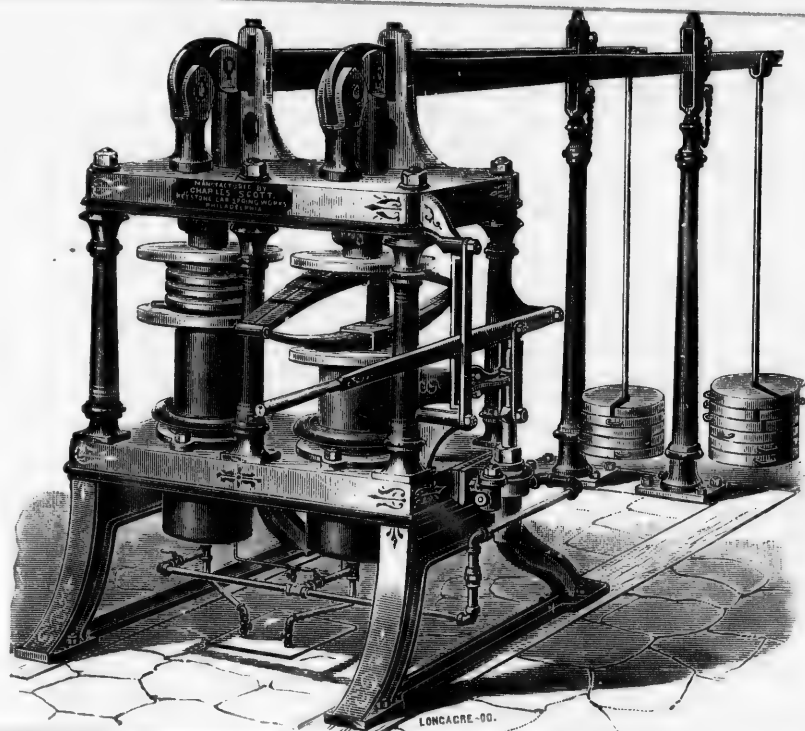
Keystone Duplex Hydraulic Testing Machine

Shows accurately the capacity, quality, and range of motion of all kinds of car springs.

The advantages of this machine over all others are, that it is
The best and strongest made ;
The simplest in construction ;
Is less liable to get out of order.

CAPACITY.—Will test springs to 60,000 lbs.

More of them in use by railroads in the United States than of all other makes combined.



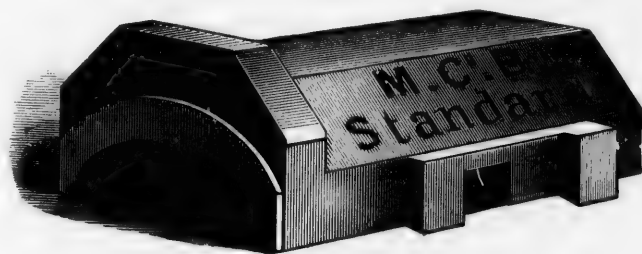
Sole Agents for the
Dominion of Canada
for
Ajax Metal Company,
Philadelphia.

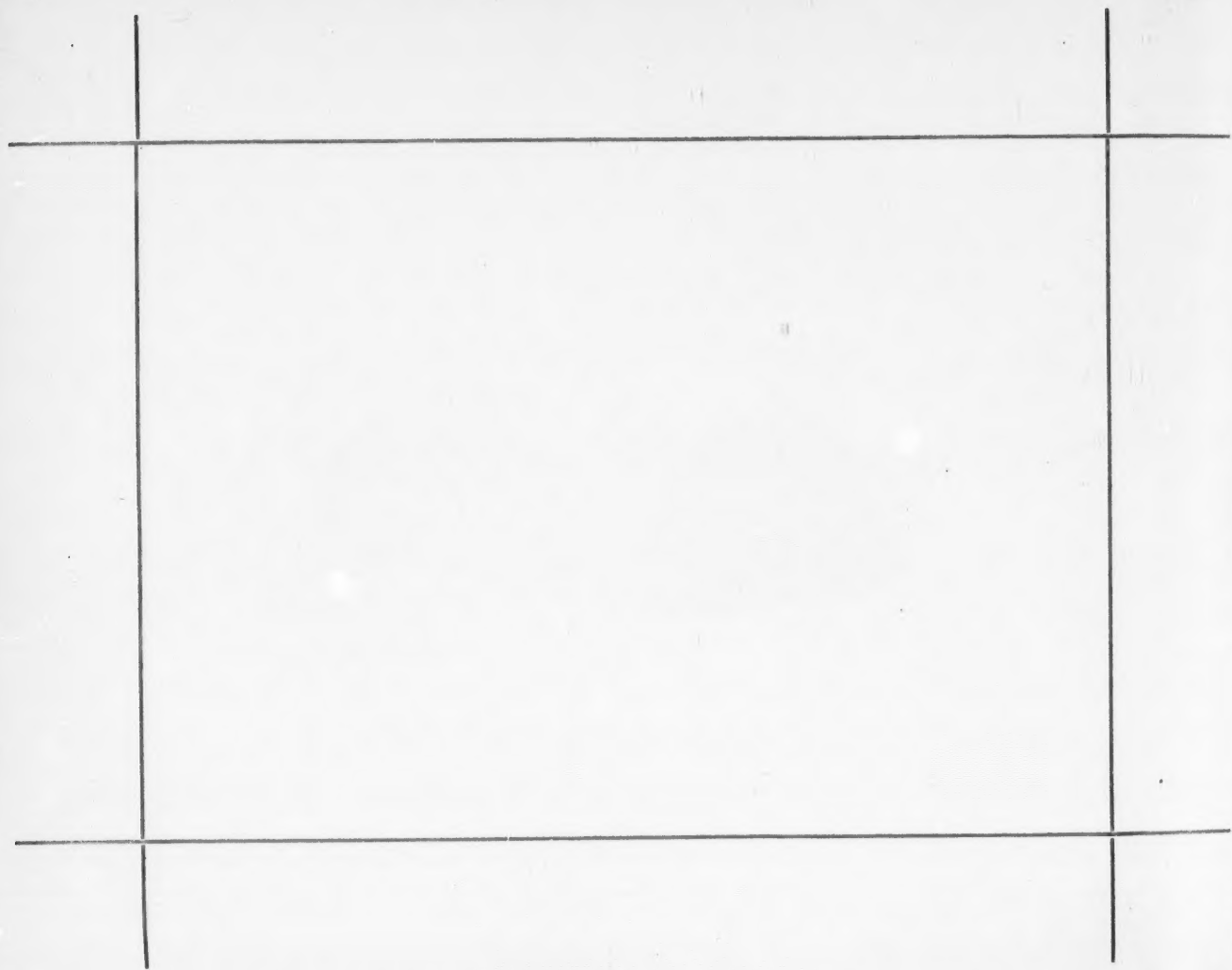
Brasses.

Babbitts.

Bronzes.

Solders.







Press of
Times Printing House,
725 and 727 Chestnut Street,
Philadelphia.

